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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
FOUD, HICHAM B				
ART UNIT		PAPER NUMBER		
2467				
NOTIFICATION DATE		DELIVERY MODE		
05/09/2011		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/656,625

Applicant(s)

DAWIDOWSKY ET AL.

Examiner

HICHAM B. FOUD

Art Unit

2467

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-12 and 15-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2, 4-12 and 15-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-945)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/08/2011 has been entered.

Response to Amendment

2. The amendment filed on 02-08-2011 has been entered and considered.
Claims 1-2, 4-12 and 15-22 are pending in this application.
Claims 3 and 13-14 are canceled.
Claims 18-22 are newly added.

Claim Objections

3. Claims 15 and 18-19 are objected to because of the following informalities:
Claim 15 recites "a next transmission frame" which seems to refer back to the same term in claim 1 line 26. If this is true, it is suggested to change the latter term to -- the next transmission frame--. Similar issue occurs in claims 18-19.
Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7-11, 17 and 20-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 7-8, recite a plurality of means (such as "a non QOS allocating means" and "a bandwidth returning means") which have no corresponding structure in the specification. Therefore, it is not known the metes and the bounds of the claimed invention.

Claims 10-21, recite a plurality of means (such as "a determining means") which have no corresponding structure in the specification. Therefore, it is not known the metes and the bounds of the claimed invention.

Claims 9, 11, 17 and 20 are rejected because of their dependency on the rejected claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4-12 and 15-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vogel et al (US 7,130,283) in view of Cable et al (US 6,854,013), Elwalid et al (US 6,567,415) and Benveniste (US 2002/0163933).

For claim 1, Vogel discloses a method to allocate bandwidth, which method is implemented at a central controller of a network (see col.3 lines 5-10 and Figure 1 element 420; bandwidth manager), comprising: allocating, at the central controller, an amount of bandwidth to a connection requiring a certain QoS (see column 6 lines 4-18; UT 220 of Fig.1 get allocated "Full Allocation" that satisfy a specific data rate "full rate" (claimed certain QOS)), wherein an owner of the connection is a requesting terminal which is a terminal of the network (see Figure 1 and see column 6 lines 4-18, UT 220 requesting the bandwidth through the reverse/backward/return communication channel); freeing, at the central controller, a certain amount of the allocated amount of bandwidth as freed bandwidth after receiving a resource request from the operator of the connection indicating actual needed amount of bandwidth (see Figure 1, bandwidth manager and see column 6 lines 5-18 and/or column 6 line 61 to column 7 line 2; release the full bandwidth to minimum or no bandwidth (unused/freed bandwidth) based on data in the buffer and the transition from one state to another based on the transmission of the transition request), wherein the actual needed amount of bandwidth does not exceed said amount of bandwidth (see column 6 lines 5-18 and/or column 7 lines 16-19; UT sends the full-to-minimum bandwidth transition request, wherein the full is the allocated amount of BW and minimum is the needed BW) and said freed bandwidth is a difference between the allocated amount of bandwidth and the actual needed amount of bandwidth (see column 6 lines 5-18 and/or column 6 line 67 to column 7 line 1; releasing (freeing) full bandwidth since no data in buffer to transmit), when said operator of the connection transmits a request for a new needed amount of

bandwidth greater than said needed amount of bandwidth (see column 6 lines 5-18 and/or col.7 lines 20-26; in case of more packets in the buffer, the UT sends a countermanding request in column 6 lines 5-18 and/or column 7 lines 39-42; the transition from minimum to full BW), the new needed amount of bandwidth not exceeding said amount of bandwidth (column 6 lines 5-18 and/or column 7 lines 39-42; the transition from minimum to full BW (the BW requested does not exceed full BW), immediately returning as much of the freed bandwidth as required so that said new needed amount of bandwidth is available to said operator of the connection (see column 6 lines 5-18 and/or column 7 lines 39-42; the transition from minimum to full BW to secure clearing buffers from building up); determining, in the requesting terminal, a filling status of a transmit queue which indicates how much sending data is in the transmit queue (see column 7 lines 10-12; the current amount of backlogged data in the buffer), determining, in the requesting terminal, said actual needed amount of bandwidth as bandwidth needed in a next transmission frame, the actual needed amount of bandwidth depending on the filling status of the transmit queue and not exceeding the amount of bandwidth (see column 7 lines 14-20; determination to transition from full bandwidth state to minimum bandwidth state based on filling status of the buffer and wherein the transition to another state reads on the "next transmission frame"), and transmitting, from the requesting terminal, the actual needed amount of bandwidth to the central controller with a current transmission frame (see column 7 lines 17-19; the transmission of the transition BW request in *anticipation* of emptying the buffer which

means that the request is sent in the full bandwidth state "current transmission frame" since the terminal still emptying the buffer by the use of the full bandwidth).

Vogel discloses all the subject matter with the exception of disclosing that the connection is a QoS connection, the amount of bandwidth is fixed and that the fixed amount of bandwidth is independent from an actual needed amount of bandwidth. However, Cable discloses a method that optimizes network bandwidth for QoS connection by the use of RSVP that reserves and allocates fixed amount of bandwidth and wherein the fixed amount of bandwidth is independent from an actual needed amount of bandwidth (see at least col.2 lines 44-55, col.5 lines 31-32, col. 60-65; the use of QoS which satisfies QoS connection and the use of RSVP protocol which allocates fixed amount of bandwidth that is independent from an actual needed amount of bandwidth since it is fixed and the optimal use of fixed QoS connection by freeing unneeded bandwidth). Thus, it would have been obvious to the one ordinary skill in the art at the time of the invention to use the teaching of Cable into method of Vogel for the purpose of making use of bandwidth optimally (see at least Cable col.2 lines 52-53) and still satisfying QoS.

Vogel in view of Cable discloses all the subject matter with the exception of explicitly disclosing allocating the freed BW to a non-QOS connection. However, Elwalid discloses allocating the freed BW to a non-QOS connection (see column 6 lines 46-49; the allocation of unused BW from QOS connections to non-QOS connections (best effort)). Thus, it would have been obvious to the one ordinary skill in the art at the time of the invention to use the allocation method of unused BW to non-QOS

connections of Elwalid into method of Vogel in view of Cable for the purpose of maximizing the BW available to best effort traffic (non-QOS connections) while satisfying the guaranteed of the QOS classes (see at least Elwalid col.3 lines 15-18).

Vogel in view of Cable and Elwalid discloses all the subject matter with the exception wherein the network is an ad-hoc network. However, Benveniste discloses the use of an ad-hoc network (see at least [0033]). Thus, it would have been obvious to the one ordinary skill in the art at the time of the invention to use the teaching of Benveniste (an ad-hoc network) into the method of Vogel in view of Cable and Elwalid for the purpose of having the advantage of adding quickly new devices and benefiting from all the advantages of the ad-hoc network.

For claims 2, 16, Elwalid discloses a method characterized by allocating some or all of the freed bandwidth to another connection, the another connection being a connection without a fixed amount of allocated bandwidth (see column 6 lines 46-49; the allocation of unused BW from QOS connections to non-QOS connections (best effort)). And, Benveniste discloses the ad-hoc network (see [0033]).

Claims 4 and 5 are rejected for same reasons as claim 1.

Claims 16 and 17 are rejected for same reasons as claim 2.

For claims 6, 9, 11 and 12, Benveniste discloses that ETSI HIPERLAN/2 is the European counterpart to the American 802.11a with QOS features (see [0017]). Thus it would have been obvious to the ordinary skill in the art at the time of invention to modify the network as taught by Vogel in view of Cable and Elwalid to an ad hoc network operated according to the ETSI HIPERLAN/2 standard for the purpose of the direct

communication of the terminals without a network controller or base station and using the ETSI HIPERLAN/2 standard so it can operate in Europe.

Claims 7 and 8 are rejected for same reasons as claim 1.

Claim 10 is rejected for same reasons as claim 1.

For claim 15, Vogel in view of Cable, Elwalid and Benveniste further discloses a method wherein the freed bandwidth is re-allocated in a next transmission frame (See at least Vogel: see Col. 3 lines 5-9 column 7 lines 1-49; the allocation of the unused bandwidth and/or Cable: col.2 lines 44-55; the re-allocation of the unneeded BW for a next transmission frame to be used).

For claims 18-21, Vogel further discloses that the transition to Full BW is based on input buffer (filling status of the transmit queue) (see col.3 lines 27-29). Vogel in view of Cable, Elwalid and Benveniste disclose all the subject matter with the exception of explicitly disclosing determining of said actual needed amount of BW based only on the filling status of the transmit queue. However, Vogel further discloses determining of said actual needed amount of BW based on the filling status of the transmit queue and the values of T1 and T2 (see col.7 lines 14-17). It is generally considered to within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system. Thus, it would have been obvious to the one ordinary skill in the art at the time of the invention to adjust the value of T1 and T2 to be a zero since zero is also a numeric value. The motivation is to have a simple system that varies only based on the data in the input buffers and therefore avoid any wasting of bandwidth that may occur by the introduction of any other values/variables.

For claim 22, Vogel discloses a method to allocate bandwidth, which method is implemented at a central controller of a network (see col.3 lines 5-10 and Figure 1 element 420; bandwidth manager), comprising: allocating, at the central controller, an amount of bandwidth to a connection requiring a certain QoS (see column 6 lines 4-18; UT 220 of Fig.1 get allocated "Full Allocation" that satisfy a specific data rate "full rate" (claimed certain QOS)), wherein an owner of the connection is a requesting terminal which is a terminal of the network (see Figure 1 and see column 6 lines 4-18, UT 220 requesting the bandwidth through the reverse/backward/return communication channel); freeing, at the central controller, a certain amount of the allocated amount of bandwidth as freed bandwidth after receiving a resource request from the operator of the connection indicating actual needed amount of bandwidth (see Figure 1, bandwidth manager and see column 6 lines 5-18 and/or column 6 line 61 to column 7 line 2; release the full bandwidth to minimum or no bandwidth (unused/freed bandwidth) based on data in the buffer and the transition from one state to another based on the transmission of the transition request), wherein the actual needed amount of bandwidth does not exceed said amount of bandwidth (see column 6 lines 5-18 and/or column 7 lines 16-19; UT sends the full-to-minimum bandwidth transition request, wherein the full is the allocated amount of BW and minimum is the needed BW) and said freed bandwidth is a difference between the allocated amount of bandwidth and the actual needed amount of bandwidth (see column 6 lines 5-18 and/or column 6 line 67 to column 7 line 1; releasing (freeing) full bandwidth since no data in buffer to transmit), when said operator of the connection transmits a request for a new needed amount of

bandwidth greater than said needed amount of bandwidth (see column 6 lines 5-18 and/or col.7 lines 20-26; in case of more packets in the buffer, the UT sends a countermanding request in column 6 lines 5-18 and/or column 7 lines 39-42; the transition from minimum to full BW), the new needed amount of bandwidth not exceeding said amount of bandwidth (column 6 lines 5-18 and/or column 7 lines 39-42; the transition from minimum to full BW (the BW requested does not exceed full BW), immediately returning as much of the freed bandwidth as required so that said new needed amount of bandwidth is available to said operator of the connection (see column 6 lines 5-18 and/or column 7 lines 39-42; the transition from minimum to full BW to secure clearing buffers from building up).

Vogel discloses all the subject matter with the exception of disclosing that the connection is a video QoS connection, the amount of bandwidth is fixed and that the fixed amount of bandwidth is independent from an actual needed amount of bandwidth. However, Cable discloses a method that optimizes network bandwidth for video QoS connection by the use of RSVP that reserves and allocates fixed amount of bandwidth and wherein the fixed amount of bandwidth is independent from an actual needed amount of bandwidth (see at least col.2 lines 44-55, col.5 lines 31-32, col. 60-65; the use of QoS which stratifies at least Video connection and the use of RSVP protocol which allocates fixed amount of bandwidth that is independent from an actual needed amount of bandwidth since it is fixed and the optimal use of fixed QoS connection by freeing unneeded bandwidth). Thus, it would have been obvious to the one ordinary skill in the art at the time of the invention to use the teaching of Cable into method of

Vogel for the purpose of making use of bandwidth optimally (see at least Cable col.2 lines 52-53) and still satisfying QoS.

Vogel in view of Cable discloses all the subject matter with the exception of explicitly disclosing allocating the freed BW to a non-QOS connection. However, Elwalid discloses allocating the freed BW to a non-QOS connection (see column 6 lines 46-49; the allocation of unused BW from QOS connections to non-QOS connections (best effort)). Thus, it would have been obvious to the one ordinary skill in the art at the time of the invention to use the allocation method of unused BW to non-QOS connections of Elwalid into method of Vogel in view of Cable for the purpose of maximizing the BW available to best effort traffic (non-QOS connections) while satisfying the guaranteed of the QOS classes (see col.3 lines 15-18).

Vogel in view of Cable and Elwalid discloses all the subject matter with the exception wherein the network is an ad-hoc network. However, Benveniste discloses that the use of an ad-hoc network (see at least [0033]). Thus, it would have been obvious to the one ordinary skill in the art at the time of the invention to use the teaching of Benveniste (an ad-hoc network) into the method of Vogel in view of Cable and Elwalid for the purpose of having the advantage of adding quickly new devices and benefiting from all the advantages of the ad-hoc network.

Response to Argument

6. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection by the introduction of a new reference "Cable et al".

7. Applicant's arguments filed have been fully considered but they are not persuasive.

In page 12 of the Remarks, the applicant is arguing the added limitations to claim

1. Applicant repeatedly argues that Vogel does not teach "determining, in the requesting terminal, a filling status of a transmit queue which indicates how much sending data is in the transmit queue..." Examiner respectfully disagrees; the feature of the limitations listed above is clearly met by Vogel. Vogel explicitly designates the above limitations. Vogel does not choose to use his own lexicography to designate the above limitations. However, the steps performed by Vogel are the same regardless to the terminology used. Vogel clearly discloses determining, in the requesting terminal, a filling status of a transmit queue which indicates how much sending data is in the transmit queue (see column 7 lines 10-12; the current amount of backlogged data in the buffer), determining, in the requesting terminal, said actual needed amount of bandwidth as bandwidth needed in a next transmission frame, the actual needed amount of bandwidth depending on the filling status of the transmit queue and not exceeding the amount of bandwidth (see column 7 lines 14-20; determination to transition from full bandwidth state to minimum bandwidth state based on filling status of the buffer and wherein the transition to another state reads on the "next transmission frame"), and

transmitting, from the requesting terminal, the actual needed amount of bandwidth to the central controller with a current transmission frame (see column 7 lines 17-19; the transmission of the transition BW request in *anticipation* of emptying the buffer which means that the request is sent in the full bandwidth state "current transmission frame" since the terminal still emptying the buffer by the use of the full bandwidth).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.
9. **Examiner's Note:** Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

When responding to this office action, applicants are advised to clearly point out the patentable novelty which they think the claims present in view of the state of the art disclosed by the references cited or the objections made. Applicants must also show

how the amendments avoid such references or objections. See 37C.F.R 1.111(c). In addition, applicants are advised to provide the examiner with the line numbers and pages numbers in the application and/or references cited to assist examiner in locating the appropriate paragraphs.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HICHAM B. FOUAD whose telephone number is (571)270-1463. The examiner can normally be reached on Monday - Friday 10-6 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Phillips can be reached on 571-272-3940. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. B. F./
Examiner, Art Unit 2467

/HASSAN PHILLIPS/
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